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PHILOSOPHICAL TRANSACTIONS.

Monday, February 11. 1666.

The Contents.

Trials proposed to be made for the Improvement of the Experiment of Transfusing Blood out of one live Animal into another. A Method for Observing the Eclipses of the Moon, free from the Common Inconveniences. An Account of some Celestial Observations lately made at Madrid. Extract of a Letter, lately written to the Publisher, containing some Observations about Insects and their Innoxiousness, &c. An Account of some Books, vid.
 I. TOME TROISIEME DES LETTRES DE M. DESCARTES. II. ASTRONOMIA REFORMATA P. RICCIOLI. III. ANATOMIE MEDULLÆ SPINALIS ET NERVORUM, inde provenientium, GERARDI BLASII, M. D. *An Advertisement about the re-printing of M. Evelyns Sylva and Pomona. A Table of the Transactions, printed theſe two years.*

Tryals propoſed by Mr. Boyle to Dr. Lower, to be made by him, for the improvement of Transfusing Blood out of one live Animal into another; promiſed Numb. 20. p. 357.

THe following *Queries* and *Tryals* were written long ſince, and read about a Moneth ago in the *R Society*, and do now come forth againſt the Authors intⁿtion, at the earneſt deſire of ſome Learned Perſons, and particularly of the worthy *Doctor*, to whom they were addreſſed; who thinks, they may excite and aſſiſt others in a matter, which, to be well proſecuted, will require many hands. At the reading of them, the *Author* declared, that of divers of them he thought he could fore-ſee the Events, but

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yet judged it fit, not to omit them, because the Importance of the *Theories*, they may give light to, may make the Tryals recompence the pains, whether the success favour the *Affirmative* or the *Negative* of the Question, by enabling us to determine the one or the other upon surer grounds, than we could otherwise do. And this Advertisment he desires may be applied to those other Papers of his, that consist of *Queries* or proposed *Tryals*.

The Quæries themselves follow.

1. Whether by this way of Transfusing Blood, the disposition of Individual Animals of the same kind, may not be much altered? (As whether a *fierce* Dog, by being often quite new stocked with the blood of a *cowardly* Dog, may not become more tame; & *vice versa*, &c?)

2. Whether immediately upon the unbinding of a Dog, replenisht with adventitious blood, he will know and fawn upon his Master; and do the like customary things as before? And whether he will do such things better or worse at some time after the Operation?

3. Whether those Dogs, that have *Peculiarities*, will have them either abolisht, or at least much impaired by transfusion of blood? (As whether the blood of a *Mastiff*, being frequently transfused into a *Blood-hound*, or a *Spaniel*, will not prejudice them in point of scent?)

4. Whether acquired Habits will be destroy'd or impair'd by this Experiment? (As whether a Dog, taught to fetch and carry, or to dive after Ducks, or to sett, will after frequent and full recruits of the blood of Dogs unfit for those Exercises, be as good at them, as before?)

5. Whether any considerable change is to be observ'd in the Pulse, Urin, and other Excrements of the *Recipient* Animal, by this Operation, or the quantity of his insensible Transpiration?

6. Whether the *Emittent* Dog, being full fed at such a distance of time before the Operation, that the mess of blood may be suppos'd to abound with *Chyle*, the *Recipient* Dog, being before hungry, will lose his appetite, more than if the *Emittent* Dogs blood had not been so chylous? And how long, upon a
Vein

Vein opened of a Dog, the admitted blood will be found to retain *Chyle*?

7. Whether a Dog may be kept alive without eating by the frequent Injection of the *Chyle* of another, taken freshly from the Receptacle, into the Veins of the *Recipient Dog*?

8. Whether a Dog, that is *sick* of some disease chiefly imputable to the mass of blood, may be cured by exchanging it for that of a *sound Dog*? And whether a *sound Dog* may receive such diseases from the blood of a *sick one*, as are not otherwise of an infectious nature?

9. What will be the Operation of frequently stocking (which is feasible enough) an *old* and feeble Dog with the blood of *young ones*, as to liveliness, dulness, drowsiness, squeamishness, &c. *et vice versa*?

10. Whether a *small* young Dog, by being often fresh stockt with the blood of a young Dog of a *larger kind*, will grow bigger, than the ordinary size of his own kind?

11. Whether any Medicated Liquors may be injected together with the blood into the *Recipient Dog*? And in case they may, whether there will be any considerable difference found between the separations made on this occasion, and those, which would be made, in case such Medicated Liquors had been injected with some other Vehicle, or alone, or taken in at the mouth?

12. Whether a Purging Medicine, being given to the *Emit-tant Dog* a while before the Operation, the *Recipient Dog* will be thereby purged, and how? (which Experiment may be hugely varied.)

13. Whether the Operation may be successfully practis'd, in case the injected blood be that of an Animal of another *Species*, as of a *Calf* into a *Dog*, &c. and of a *Cold Animal*, as of a *Fish*, or *Frog*, or *Tortoise*, into the Vessels of a *Hot Animal*, and *vice versa*?

14. Whether the *Colour* of the Hair or Feathers of the *Recipient Animal*, by the frequent repeating of this Operation, will be changed into that of the *Emittent*?

15. Whether by frequently transfusing into the same Dog, the blood of some Animal of another *Species*, something further, and more tending to some degrees of a change of *Species*, may

be effected, at least in Animals near of Kin; (As Spaniels and Setting Dogs, Irish Grey-hounds and ordinary Grey-hounds, &c.)

16. Whether the Transfusion may be practis'd upon pregnant Bitches, at least at certain times of their gravitation? And what effect it will have upon the Whelps?

There were some other *Queries* proposed by the same *Author*; as, the weighing of the *Emittent* Animal before the Operation, that (making an abatement for the Effluvia, and for the Excrements, if it voids any) it may appear, how much blood it really loses. To which were annexed divers others not so fit to be perused but by *Physitians*, and therefore here omitted.

A Method

For Observing the Eclipses of the Moon, free from the Common Inconveniencies, as it was left by the Learned Mr. Rook, late Gresham-Professor of Geometry.

Eclipses of the Moon are observed for two principal ends; One *Astronomical*, that by comparing Observations with Calculations, the *Theory* of the *Moons Motion* may be perfected, and the *Tables* thereof reformed: the other, *Geographical*, that by comparing among themselves the Observations of the same *Ecliptick Phases*, made in *divers* places, the *Difference* of *Meridians* or *Longitudes* of those places may be discerned

The Knowledge of the Eclipse's *Quantity* and *Duration*, the *Shadows*, *Curvity*, and *Inclination*, &c. conduce only to the former of these ends. The exact time of the Beginning, Middle, and End of Eclipses, as also in *Total* ones, the Beginning and End of *Total* darkness, is useful for both of them.

But because in Observations made by the *bare Eye*, these times considerably differ from those with a *Telescope*; and because the *Beginning* of Eclipses, and the *End* of *Total* darkness, are scarce to be observed exactly, even with Glasses (none being able clearly to distinguish between the *True Shadow* and *Penumbra*, unless he hath seen, for some time before, the *Line*, separating them, pass along upon the Surface of the Moon;) and lastly, because in small

Partial